PAINFUL GASTRIC NEUROSES:

Their Nature, Symptomatology, Etiology, Diagnosis, and Treatment.

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PAIN in the stomach is always evidence of some disturbance of the sensory innervation of that organ, and the success that attends the endeavor to cure a painful gastric condition will be commensurate with the completeness of the removal of its cause. In perfect health, no sensation whatever is experienced in the stomach from the presence of a reasonable quantity of food therein, nor from the act of digestion. Frequently, however, an overloaded stomach gives discomfort, if not real pain. If the nerves of the stomach are not disturbed by direct or remote irritation, or by disorder of their nutrition from chronic disease or certain forms of toxemia, digestion takes place without sensation. Doubtless many instances of pain in the stomach are of the nature of neuralgias, as the pain is complained of when the stomach is empty as well as when it contains food; and the chemistry of gastric digestion is not infrequently normal while pain is present.

In considering the painful neuroses of the stomach the organic diseases of the organ, such as carcinoma

and ulcer, are necessarily left untouched. A good deal of difficulty arises sometimes in distinguishing between the sensory disturbances that are functional and those that are organic in origin, and the most exhaustive means of diagnosis at our command may have to be brought to bear upon a case in order to reach a satisfactory decision. This is especially true of ulcer and carcinoma, when gastralgia occurs in patients who bear many of the stigmata of one or the other of these diseases. Gastralgia independent of ulcer, and ulcer accompanied by intense pain, are each common in young women, while gastralgia without carcinoma, and carcinoma with pain, are each of frequent occurrence in old people. Particular reference to the pain in hyperchlorhydria is omitted in this connection, as this secretory neurosis is so closely allied to ulcer of the stomach; it is, furthermore, best considered under the head of secretory disturbances.

It is not uncommon, however, to find definite disorder either of secretion or of motion in cases of gastralgia, but it is not always easy to trace a causative connection between these and gastralgia. For instance, a woman under my care who had attacks of severe gastralgia, also presented the condition of gastric anacidity, in which the stomach-contents were certainly non-irritating, as they were persistently subnormal in acidity. Occasionally the motion became hurried, and the stomach was found completely empty two hours after the ordinary mixed meal.

The most severe form of gastric pain is that which we designate essential gastralgia. It is of a par-

oxysmal nature, occurs most frequently in hysterical women, comes on for the most part independently of the time of eating or of the character of the food, and is accompanied by great nervous perturbation. The duration of the paroxysms of gastralgia varies in different cases and in separate attacks in the same case. Several patients under my care suffered twelve hours in some attacks when not relieved by treatment. There is a noticeable tendency on the part of patients to exaggerate the pain. One of my patients always became extremely excited in describing her attacks, and repeatedly declared she could not live through another paroxysm. This exaggeration is often more marked during the pain, and this patient cried and screamed alternately, while otherwise behaving in an unreasonable manner.

The location of the pain in essential gastralgia is often in the region of the pylorus, which fact sometimes confuses the exclusion of biliary colic in differential diagnosis.

Of the less severe forms of gastric pain, the time of onset, the character, and the location, are of chief importance. Some complain of pain after eating, others of pain an hour before meals, while a proportion of cases have pain at irregular periods. A few cases complain of constant pain in the stomach. One lady, about thirty-five years old, who has been a pronounced neurasthenic for many years, says she never knows what it is to be free from gastric pain. As she is constantly thinking of and crying about herself, one is inclined to think she exaggerates her stomach-trouble, as she does everything con-

nected with herself and her suffering. The gastric chemistry in this case is irregular. At one examination I found it normal, while at the next there was lactic-acid fermentation and subnormal hydrochloric acid. Her stomach was not slow in emptying itself, although constipation was quite persistent. Another case is in the person of a young girl, aged twenty, who has complained of various neuralgias for a year and a half. Upon two direct examinations of her stomach, motion and secretion were found normal, and absorption was good. At the present writing, this girl declares she has constant pain in her stomach, but this is scarcely credible, as she is so prone to suggestion that she will say she has pain in any imaginable part of her body. Nevertheless, she suffers as such neurasthenic creatures do, and her case is a good example of the influence of the psychic state upon gastric sensation. This girl's vitality is low, her nutrition is imperfect, her skin is "muddy," she is constipated, her arteries are tense, the capillary circulation poor, and she is decidedly hyperopic. It is not surprising that these conditions are accompanied by headache and stomach-ache.

Cardialgia is the predominant form of pain in some cases. It may or may not be accompanied by regurgitation or by belching of gas. It is usually associated with a high total acidity of the gastric contents, or it results from hyperesthesia of the sensory filaments about the cardiac opening which renders them painful under the stimulation of normal acidity and intra-gastric pressure. Sometimes spasm of the cardia is accompanied by severe pain.

In a woman treated two years ago for gastroptosis with some dilatation and a pronounced gastric catarrh, upon several occasions the cardia contracted tightly around the stomach-tube, and it was necessary to wait until the spasm had subsided before withdrawing the tube. The patient showed evidence of suffering when the contraction took place and put her hand over the lower end of the sternum. She said the pain there was intense for a few moments. This incident suggests that spasm of the cardia may sometimes cause cardialgia. Not only is severe gastralgia sometimes felt in the region of the pylorus, but less severe pain occurs at this point. The same considerations apply here as apply to pain at the cardia, with the exception that in differential diagnosis carcinoma and ulcer are more frequent at the pylorus, and whereas in cardialgia pressure over the region of pain often gives relief, in pain near the pylorus tenderness upon pressure is usually quite noticeable even in the absence of organic disease The anatomic proximity of the pylorus to the cardia is worth remembering when we consider the comparative remoteness of the areas to which patients refer pain.

As regards the character of gastric pain, it is variously described as shooting, boring, gnawing, burning, or tearing. A dragging, dull, heavy ache is also described by some. Thus it will be seen that abnormal sensations in the stomach assume a variety that accounts for the difficulty many patients experience in describing their peculiar form of discomfort.

Etiology. Neurasthenia exists in many instances

without any complaint whatever of the stomach. In another class of neurasthenics intermittent stomach-trouble is present; while in a third class "the *ego* in the cosmos" of the neurasthenic centers in the stomach, and that forms the chief complaint. This is the "neurasthenia gastrica" of some writers. This last class of patients may be divided into those who have pain but normal digestion, and those who have pain with some defect in gastric chemistry or motility. In the first the condition is a simple sensory neurosis; in the latter it is a mixed neurosis with pain. The relation between neurasthenia and gastralgia is one that often involves the question of the etiologic factors underlying the former condition; nevertheless, pain in the stomach is very commonly associated with the symptom-complex that we call neurasthenia, and the relief of the gastric symptoms is often commensurate with the improvement in the general and nervous conditions. For instance, a married woman, aged twenty-five, the mother of two healthy children, presented herself in May, 1893, complaining of pain and distress after eating, although her appetite was enormous. She also had headache, backache, and pain referred to the ovarian region. For years she had been wretched generally, but not sick in bed. Her physician, a homeopath, had faithfully tamponed, supported, and otherwise treated her uterus during all that time, and had thoroughly impressed upon the patient that her trouble all originated in her pelvic organs. At the time of my examination she was thin, pale, weak, nervous, and constipated. Her heart and lungs were normal; the stomach was

low but not dilated; the kidneys were in place; the colon was loaded with fecal matter. The uterus was freely movable and in its proper position. There was some leukorrhea. The woman said she never was able to read half an hour without getting a severe headache. Upon refraction she was found simply hyperopic and was fitted with + cyl. 0.75 D, ax. 90°, for each eye. Her urine was mildly acid, clear yellow, with a specific gravity of 1015. No sugar or albumin was present. There was a trace of indican. Volume in 24 hours 1280 c.c., urea 14.080. Her blood registered 35 with plate and 43 with spectroscope. Her stomach showed normal HCl, with an absence of organic acids after a test-meal of lean meat, bread, and water. Gastric motion was somewhat slow; but on the whole digestion was accomplished well, and upon several direct examinations there was found no apparent cause for the gastric pain. This patient was directed to wear her glasses constantly, to flush the colon, to take a cold spinal douche every morning, to adhere to a carefully selected mixed nutritious diet, and she was given large doses of strychnin before meals, with aloin as a laxative. Emulsion asafœtidæ was given in one ounce doses four times a day. Improvement commenced and steadily progressed until she reported herself in about two months entirely free from gastric pain, and said she never felt better in her life. I have since learned from the patient that she remains well.

It is difficult to draw a sharp line of distinction between neurasthenia and hysteria so far as they bear an etiologic relation to gastralgia. Those cases manifesting intense gastralgia, while apparently

in good health, sometimes behave in an excited and unreasonable manner, as is illustrated in the case of a healthy woman who, when attacked by gastralgia, not infrequently spoke unkindly to and slapped her sisters and daughters, while they were endeavoring to give her relief, and afterward said she was sorry for her behavior, but that she did not know what she did or said when in pain. Another woman became so terrified when she felt the first twinge of pain that she occasionally hurried to the office excited and trembling in fear that the pain would become severe.

Locomotor ataxia is the cause of gastric pain in some cases. The pain, to be at all characteristic, comes in the nature of a crisis, and is very severe, but the lesser forms of pain may be present in this disease. The other evidences of the disease may be latent and the diagnosis be thus confused. Other cord-diseases and affections of the spinal column occasionally cause gastralgia.

Chlorosis is sometimes accompanied by gastric pain, and the point of chief importance in such instances is the differentiation between ulcer and simple gastralgia. My associate, Dr. Stockton, was consulted some years ago by a young girl with chlorosis, and during the course of his conversation with the patient he told her to go home and to bed at once, or else she would have another attack of vomiting and would vomit blood. She disregarded the advice, and about twelve hours later a message came that she had vomited a large amount of blood. This girl's chief complaint was of pain after eating with occasional vomiting of very sour contents, and she was the color of white wax.

In chlorosis the conditions are ripe for the onset of various neuralgias, and in many cases the pain in the stomach is not associated with ulcer or with the hyperchlorhydria that accompanies ulcer. Indeed, chlorosis exists not infrequently with subnormal HCl. Grave anemias following acute diseases, like typhoid fever, are sometimes accompanied by severe pain in the stomach, with low HCl, retarded motion, and some fermentation.

The general malnutrition caused by lithemia, gout, rheumatism, malaria, tuberculosis, syphilis, and renal insufficiency is often associated with painful gastric disturbances of mostly a neurotic character. With my associate, Dr. Stockton, I have observed a number of cases of gastralgia in men that yielded to potassium iodid after resisting other forms of treatment. Dr. Lyman,[1] in a paper entitled "Gastro-enteric Rheumatism," which he read before the Association of American Physicians, June 1, 1894, says the pain so commonly associated with excess of hydrochloric acid and ascribed by many observers to the irritating action of the acid upon the walls of the stomach, is in truth a definite rheumatic gastralgia depending upon irritation of the gastric plexus of nerves by toxins resulting from hepatic and renal insufficiency. Dr. Lyman calls particular attention to the arthritic cases having attacks of gastric pain. My very modest experience in this matter does not lead me to call these cases "gastric rheumatism." Sometimes stomach-trouble with pain may be traced to the excessive use of

[1] American Journal of the Medical Sciences, June, 1894.

alcohol, tobacco, coffee, cocain, opium, or to the habit of masturbation.

Finally, we come to consider the most fruitful of all sources of painful gastric neuroses, consisting in the effect of mental fatigue, worry, excitement, and the various sources of reflex irritation upon gastric innervation. Overworked business men who are under a hard strain fail first in appetite and digestion. They begin by feeling weight and distress in the epigastrium after meals, and end by living on milk or broth because they fear solid food will bring the pain they know too well. Financial anxieties or reverses, which keep a man in a state of high nervous tension for a long time, are a fruitful source, not only of gastric disturbance but of many a general breakdown which may never be recovered from even after years of travel and treatment. Then the men who work from eight until six in a close office, and spend every night until two o'clock smoking, drinking, or what not, are finally made aware that a stomach needs rest, oxygen, and good innervation in order to functionate well and painlessly. Women are subject to innumerable disturbing influences in every-day existence: Late hours, late suppers, loss of sleep, continual social dissipation, crosses in love, constant emotional excitement for some, and for others loss of husbands or children, husbands gone wrong, neglectful or abusive, household cares, financial hardships, and other things that harass the nervous system; for shop-girls, long hours, insufficient and improper food, lack of sunshine and fresh air, coupled with discontent—these and many other influences work havoc with the

innervation of the stomach and bring about the "American dyspepsia," so called.

Of the reflex disturbances of the stomach arising from derangement of other organs, those that play the most prominent part are eye-strain, uterine or ovarian disorder, and floating kidney. Of rarer occurrence are reflexes from urethral disease, varicocele, or disease of the rectum.

The state of secretion and motion in painful nervous disorders of the stomach varies widely in different cases. In some cases motion, absorption, and gastric chemistry are normal, while in others motion alone may be at fault, or secretion may be abnormal. It is unnecessary to enter here into a close discussion of the possible disorders of motion and secretion that may be coupled with a painful state of the stomach; suffice it to say that the chief object of direct examination of the stomach is to exclude organic disease, and subsequently the tube may be used as a means of treatment.

Diagnosis.—In order to arrive at a diagnosis of a painful gastric neurosis it is necessary to exclude gastric and duodenal ulcer, carcinoma, and other organic disorders of the stomach, biliary colic, chronic pancreatitis, acute pancreatic hemorrhage, rheumatism of the abdominal walls, referred pain from renal colic or appendicitis, and intercostal neuralgia.

It is by no means always an easy task to differentiate between some of these affections and nervous gastralgia. I have already spoken of the difficulty that may attend the distinction between gastric pain in chlorosis accompanied and unaccompanied by

ulcer. If HCl is present in excess, with vomiting of blood, and sharp boring pain be localized to one small spot in the epigastrium, a little to the right of the median line, and shooting through to the back, the diagnosis of ulcer is justified. On the other hand ulcer may exist without any of these stigmata, so that all manner of obstacles may be thrown in the way of a clear diagnosis. Duodenal ulcer is more frequent in men between thirty and forty years of age, and is generally accompanied by vomiting of dark, changed blood and profuse bloody stools. HCl in excess is the rule in this affection, as it is in gastric ulcer. Gastric carcinoma may be present without coffee-ground vomitus, and without distinguishable tumor, but if these are present in a person of advanced years, and if there is a persistent absence of free HCl, with a steady failure of strength and loss of weight, a diagnosis of carcinoma may be made. Yet in two cases of severe gastralgia in women, first seen three years ago, the diagnosis was for many months in grave doubt, owing to the fact that both were well on in years; both gave a history of pain, vomiting and loss of flesh, and in both there was a continued absence of HCl, with retarded motion. After some months of treatment HCl appeared in one case, and the gastric chemistry thereafter remained fairly good. In the other case HCl was found but once. Both patients were relieved by the intragastric application of the galvanic current, and are better to-day than they were three years ago.

Biliary colic is distinguished from neuro-gastralgia by a history of gall-stones, pale stools, perhaps icterus, and bile-stained urine. Nevertheless per-

plexity may arise in this connection. About a year and a half ago a healthy-looking man, about forty years of age, presented himself, suffering with severe pain that he referred to his stomach. Upon direct examination I found good digestion, with a copious supply of HCl. Lavage and gastric sedatives gave him relief. He went to California, and was well while there. Upon his return to Buffalo he again had a severe attack of pain referred to the right epigastrium. The pain was tearing, gnawing and intolerable. The intra-gastric conditions were again found normal. The pain continued in spite of ordinary remedies, and he was sent to bed. Morphin alone gave relief, and in a few days moderate jaundice developed. Recovery took place some days later. No biliary calculi were found in the stools, nor were the latter noticeably pale. A similar case in the person of a healthy man of about the same age came under my observation last autumn.

Chronic interstitial pancreatitis is accompanied by emaciation, vomiting, glycosuria, fatty stools, epigastric pain, and occasionally salivation and lipuria. Acute pancreatic hemorrhage is usually accompanied by symptoms of profound shock, and death soon follows.

Rheumatism of the abdominal walls may be noted by tenderness upon movement, somewhat as motion is painful in lumbago.

Referred pain from renal colic will usually be attended with manifest nephralgia and the urinary condition incident to that disease, together with a history of nephritic colic. Appendicitis will be discovered if the temperature is taken and the region

of the appendix examined. Intercostal neuralgia will be detected by the presence of the tender points of Valleix.

The treatment of neuro-gastralgias aims to stop the pain in the first place, and in the second place to remove the causative elements in the case. When it is possible to apply lavage with water at a temperature of about 110° F. during an attack of severe gastralgia very great relief often follows, and sometimes the pain ceases at once. The direct application of the galvanic current to the walls of the stomach acts in some cases like a charm in dispelling the pain. The positive pole should be used inside of the stomach and the strength of the current should be from four to twenty milliamperes. If the gastric contents are of a high total acidity large doses of sodium bicarbonate or light magnesium carbonate frequently afford relief. As a local sedative in gastric hyperesthesia, a combination of cerium oxalate, or bismuth with magnesium carbonate, is usually very efficacious as a remedial agent. Occasionally one-eighth grain of cocain in tablet or in solution allays even severe pain. Chloroform or chloroform-water is also useful during an attack. A dessertspoonful of smooth whiskey or brandy sometimes gives relief. Hoffman's anodyne has not proved satisfactory in my experience. Dilute hydrocyanic acid in five-drop doses is very effective in some cases. Cannabis indica, combined with belladonna, aconite, or hyoscyamus, lessens the pain in a few cases. Antipyrin, phenacetin, and acetanilid have not proved valuable remedies in gastralgia. Occasionally a twenty-grain dose of quinin sulphate will cut short

an attack. Finally, morphin hypodermatically, may be necessary in the event of failure with other measures.

Other procedures are often helpful in the treatment of an attack of gastralgia. Sponging the spine with water as hot as the patient can bear appears to give some comfort. The old-time hot fomentations upon the epigastrium, or a mustard plaster, assists in quieting the patient and the pain. The application of hot and cold water thrown alternately in a fine jet upon a small spot on the epigastrium is useful. A hot enema sometimes gives relief from gastralgia, as it does from enteralgia.

The treatment of the condition underlying painful gastric neuroses involves the removal of the cause as far as is possible in a given case, while local treatment of the stomach is frequently to be carried out together with careful attention to the general nervous state of the patient.

If the case be one of neurasthenia all possible sources of reflex disturbance ought to be eliminated if practicable. If the patient be a so-called lithemic, or if the kidneys are sluggish, active elimination by way of the bowels and skin should be effected. The diet should in each case be regulated according to the gastric chemistry. Constipation should be effectually overcome. Massage, exercise, general faradization, and the various uses of cold water for its tonic effect, are all beneficial in many cases in improving the blood and the nervous tone.

Among the drugs that may be used with advantage for the purpose of improving the innervation of the stomach as well as improving the general condi-

tion of the patient, nux vomica or strychnin is of great value. Strychnin is a good blood-maker by stimulating the functional activity of the digestive organs and the hematopoietic apparatus. In the milder forms of gastric pain and discomfort after eating, good-sized doses of nux vomica or strychnin sulphate very often suffice to do away with the pain. Phosphorus and arsenic are often well tolerated by these patients, and are very useful. In a few cases of moderately severe gastralgia five-grain doses of quinin sulphate night and morning have been successful. Iron should be used if indicated, as the mere existence of neuro-gastralgia is no contra-indication to its use. Asafetida in emulston is a drug of signal service in hysterical cases, especially when nervous belching is a marked symptom. In some mild cases a mercurial purgative followed by Carlsbad salts in the morning, and thereafter, for a while, by the daily exhibition of Carlsbad, will be sufficient to break the morbid cycle, and, in otherwise healthy individuals, restore gastric comfort.

An ocean voyage, mountain scenery, a stay at the seaside, may effect a cure in the absence of all medication or other forms of treatment.